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ABSTRACT

This learning package is designed to enable the learner to: (a) define behavioral objectives and list characteristics of those objectives; (b) distinguish between objectives which are behaviorally stated and those not so stated; (c) identify action verbs useful to constructing behavioral objectives; (d) write objectives for a field of cognitive domain of behavior; (e) select examples of objectives which illustrate convergent thinking, divergent thinking, and evaluative thinking; and (f) prepare an individualized learning package for teacher trainees or teacher aide trainees utilizing behavioral objectives in either a six-, four-, or three-category taxonomy. Each of the above performance objectives are explained in relation to conditions set forth under which the performance is to take place, the desirable performance the learner will be engaged in when demonstrating the behavioral objective, and the extent or level of performance of writing the behavioral objectives. (MJM)

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LEARNING PACKAGE #1

WRITING BEHAVIORAL OBJECTIVES *

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* Adapted for TTT Workshop on Performance Objectives

Special recognition goes to Dr. Robert Mager and his book, Preparing Instructional Objectives, Dr. Herb Hite and his W.S.U. associates, Thorwald Esbensen of Duluth Public Schools, Mrs. Alice Duval of Northwest Regional Educational Laboratory, Mr. Roger Tunks of Portland Public Schools and Dr. James Popham of U.C.L.A. Their materials have been synthesized into this learning package.

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At the conclusion of this learning package, the learner will:

TASK #I: (a) Define "behavioral objectives," and (b) list characteristics of behavioral objectives.

TASK #II: Distinguish between objectives which are behaviorally stated and those not so stated.

TASK #III: Identify action verbs useful to constructing behavioral objectives.

TASK #IV: Write objectives for own field for cognitive domair of behavior: (a) for knowledge level of behavior, and (b) for higher levels of behavior, using either a six level, four level, three level or two level taxonomy.

TASK #V: From learner's own subject matter field select examples of objectives which illustrate, (a) convergent thinking, (b) divergent thinking, (c) evaluative thinking.

TASK #VI: The learner shall prepare an individualized learning package for a teacher trainee or a teacher aide trainee utilizing behavioral objectives in either a six, four or three category taxonomy.

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TASK I Define "Behavioral Objectives" and list characteristics of behavioral objectives.

Performance Objective #1

At the conclusion of this reading the learner shall, from memory, write a definition of "behavioral objective" and list in writing the three component parts that a behavioral objective should contain. Use only one word to describe each component with 100% accuracy.

Adapted from Thorwald Esbensen, Duluth Public Schools, Duluth, Minnesota.

For many years, educators have talked about the importance of instructional objectives. The purpose of an instructional objective is to make clear to teachers, students and other interested persons what it is that needs to be taught, or what it is that has been taught. Behavioral objectives add an additional criteria. A behaviorally stated objective is a written, specific set of instructions to the learner demanding that the learner demonstrate certain change in his observable behavior as evidence that he has, in fact, learned. To put the matter in a single sentence, a well written behavioral objective should specify under what conditions the learning will occur, what specific observable behavior the learner will be performing when demonstrating that he has learned, and the extent of the learning, e.g., how well and how much.

Conditions---Performance---Extent. Let us consider

I. CONDITIONS

Learners are entitled to have the conditions set forth under which the performance is to take place. In short, CONDITIONS describe the given materials and resources in a particular learning situation. Let us examine two statements. Which one sets forth the conditions under which a certain kind of performance is to take place?

A. Given the Dolch list of the 95 most common nouns, the student will be able to pronounce all the words correctly on his list.

B. The student will be able to pronounce correctly at least 90% of all words found in most beginning reading books.

Statement A, which tells us the Dolch list of the 95 most common nouns will be used, sets the conditions for the demonstration of student mastery. We are told that these particular words, and no others, are the ones at issue for this objective.

Statement B, offering us only the dubious clue of "words found in most beginning reading books" does not tell us enough. Our conditions need to be defined more precisely than this.

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Let's try another.

A. The student will have an adequate comprehension of the mechanics of punctuation.

B. Given a sentence containing an error in punctuation, the student will correct the mistake.

Statement A does not describe the conditions under which the learner is to correct mistakes in punctuation.

In summary, a behavioral objective specifies the conditions under which learning is to occur.

II. PERFORMANCE

Performing means doing something. A student who performs something does something. Therefore, a behavioral objective specifies by the use of an action verb the desirable performance the learner will be engaged in when demonstrating that he has learned.

There are two statements which are describing performance. Which one is expressed in terms of student performance?

A. The student will have a good understanding of the alphabet, A-Z.

B. The student will be able to pronounce the names of the letters of the alphabet, A-Z.

Statement A tells us that the student will have a good understanding of the letters of the alphabet, A-Z. But his is not very clear. We cannot tell what it is that the student is supposed to be able to do as a result of this understanding.

Statement B contains an observable student action, pronounce. Thus it explains what the student will be able to do. He will be able to pronounce the names of the letters of the alphabet, A-Z.

Let's try one more.

A. The student will comprehend aspects of the writing style of Ernest Hemingway.

B. Given ten pairs of short prose passages—each pair having one selection by Hemingway and one by a different author—the student is able, with 90% accuracy, to choose the ten selections written by Hemingway.

Statement A, which says that the student will "Comprehend aspects of Hemingway's writing style" is rather cloudy. We cannot tell what it is that the student is supposed to do as a result of his comprehension.

At this point, an objection may be raised. Isn't the person who is comprehending something doing something? Isn't intellectual performance an acceptable kind of student performance?

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Certainly. The difficulty is that mental activity, as such, is not directly observable. We cannot literally open up a person's head and see the thinking that is going on inside. If it is to be of use to us, a statement of performance must specify some sort of behavior that can be observed.

This does not mean that we are not concerned about intellectual performance. It does mean that since mental activity, as such, is not directly observable, some sort of behavior that is observable will have to stand for or represent the intellectual performance we have in mind.

Conditions-Performance. Now we will examine Extent.

III. EXTENT

We have now come to the matter of the extent and or level of performance. This is the single most difficult task when writing behavioral objectives. Many times it is difficult to be precise regarding "how well," particularly when dealing with higher cognitive level thought process, i.e., synthesis, evaluation. It still stands, however, that a well-written behavioral objective should establish a qualitative and/or quantitative acceptable minimum standard of achievement.

Try this objective.

A. Given twenty sentences containing both common and proper nouns, the student will be able to identify with very few mistakes both kinds of nouns.

Does this objective establish a minimum standard of achievement? No, it does not. However, we could, if we want to be explicit, restate our objective in this way. "The student should be able to identify with 100% accuracy, all common and proper nouns in the twenty sentences."

If teachers of all levels of schooling would be this explicit in writing instructional objectives, they might reasonable hope to eliminate almost immediately one cause of learning failure among students--the traditional fuzziness of classroom assignments and the method by which these assignments are evaluated.

1. Please copy the portion of this paper that defines a behavioral objective.

_____

_____

2. Three components of a behavioral objective (100% accuracy) are:

(1) _____ (2) _____ (3) _____

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Task II Being able to correctly identify objectives that are behaviorally stated and those objectives not behaviorally stated.

Performance Objective #2

Given VIMCET filmstrip-tape #2, "Educational Objectives," the learner will correctly answer 12 of 15 questions in the answer sheet accompanying this filmstrip-tape.

EDUCATIONAL OBJECTIVES ANSWER SHEET

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Do not use this sheet until instructed to do so.

1. YES NO
2. YES NO
3. YES NO
4. A B
5. A B C D
6. A B C D
7. A B
8. A B
9. A B
10. A B
11. A B
12. YES NO

Modified Objective (one) _____

_____

_____

Modified Objective (two) _____

_____

_____

_____

Modified Objective (three) _____

_____

_____

_____

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TASK III Identifying action verbs useful in constructing behavioral objectives.

Performance Objective #3

When given the following list containing 18 verbs, the learner will list in writing those verbs open to many interpretations (those of little value in constructing behavioral objectives) and those verbs open to few interpretations (those of considerable value in constructing behavioral objectives) with 100% accuracy.

WORD EXERCISE

to know	to construct
to write	to fully appreciate
to recite	to grasp the significance of
to identify	to enjoy
to understand	to list
to really understand	to compare
to differentiate	to believe
to appreciate	to have faith in
to solve	to contrast

Words open to many interpretations	Words open to fewer interpretations
1.	1.
2.	2.
3.	3.
4.	4.
5.	5.
6.	6.
7.	7.
8.	8.
9.	9.
10.	10.

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TASK IV Writing behavioral objective for cognitive domain of behavior:

A For knowledge level of behavior
B For higher levels of behavior.

Performance Objective #4

Given the following 10 objectives, the learner shall identify those objectives that are behavioral with 100% accuracy.

____ 1. Given a programmed booklet on Alaska, the student should, after carefully reading the booklet, be able to have a better understanding of the white man's influence upon the Eskimo culture.

____ 2. Given a string of beads which form a number and color pattern, the student should by adding more colored beads to the string, be able to continue the pattern.

____ 3. Given a hypothetical need for a new law which will be initiated by a branch of Minnesota government, and a randomly-arranged list of steps that must be taken in order to create the law, the student should be able to list the necessary steps in correct sequence.

____ 4. Given three simple spoken directions by the teacher, the student should be able to follow these directions in order.

____ 5. Given a magazine containing the needed illustrations, the student should be able to find at least ten pictures of people producing goods or services, label these according to occupation, and state in writing what goods or services result from the work shown (90% minimum accuracy required).

____ 6. Given a list of activities carried on by the early settlers in Duluth, the student should be able to know what goods they produced, what productive resources they used, and what trading they did.

____ 7. Given the statement, "Changing tastes of the American consumer changed the occupations required in our economy," the student should be able to comprehend the meaning of this statement.

____ 8. Given the total amount of a loan, the monthly rate of interest, and the monthly payment rate, the student should be able to determine the amount of principal repaid each month, the interest paid each month, the number of monthly payments necessary to repay the loan, and the effective annual interest rate.

____ 9. Given a list of twenty words, the student should be able to perceive that these words are arranged in alphabetical order according to the beginning letter of each word.

____ 10. Given twenty statements, each purporting to reflect the thinking of Marshall McLuhan, the student should be able, with at least 90% accuracy, to say which statements represent McLuhan's views.

TASK V Writing behavioral objectives for the four levels of the cognitive domain.

Performance Objective #5

When given the definition of each level of Bloom's "Taxonomy-Cognitive Domain," the identifying characteristics of the particular level, a sample question representing that level and a list of action verbs appropriate to that taxonomical level, the learner will write two behavioral objectives (remember: Conditions, Performance, Extent) for each of the six levels of the cognitive domain.

A. MEMORY

Definition: A memory question is one which requires the student to recall or recognize information (facts, terminology, generalizations, theories, values, procedures, skills) accumulated from past experiences.

Identifying Characteristics:

1. Only recall or recognition is required.
2. Little and possibly NO understanding is required.
3. Material or behavior required for the answer is very similar to that in the learning experience.

Examples: 1) Background: The students have read that Washington, D.C. is the capitol of the United States.
Question: What is the name of the capitol of the United States?

2) Background: The physical education teacher has explained the layout and distance for a baseball diamond.
Question: What is the distance between home plate and pitcher's mound on a baseball diamond?

Action Verbs for Memory Level:

know	define	memorize
repeat	record	list
recall	name	relate

Weaknesses:

1. Material tends to be easily forgotten unless associated with other learning.
2. One need not understand to answer. (The first grader can recite the Pledge of Allegiance without understanding republic, indivisible, liberty, justice.)
3. Tends to put emphasis on trivia.

Role of Memory

1. Foundation for other categories. Must have certain facts to work with.
2. Many factual items which our culture expects of its members: 1776, National Anthem, First President, etc.

B. TRANSLATION

Definition: A translation question requires a student to change information into a different symbolic form or language. A translation question describes an idea and instructs the student to express the idea in a different form of communication with substantially the same meaning.

Identifying Characteristics:

1. Change from one verbal form to another.
2. Change from a verbal form to a pictorial or graphic form.
3. Matching of paraphrased descriptions.
4. Socio-drama.
   (The variety of forms permits provision for individual differences.)

Examples: 1) Background: The class studied a written description of transformation of energy.
Question: Draw a diagram to illustrate transformation of energy.

2) Background: The class is shown a political cartoon.
Question: Write a paragraph or two which will present the argument shown in the cartoon.

Action Verbs for Translation Level:	restate	discuss	describe
	recognize	explain	express
	identify	locate	report
	review	tell	

CAUTION: Judgment on correctness of response must be based on correctness of idea in new symbolic form, and not upon the skill in using new form--artistic, dramatic, etc.

D. APPLICATION

Definition: Application questions are similar to interpretation questions in that students are to use ideas learned previously in problems new to the students. However, application goes one step further. In an interpretation question the student must show that he can use an idea when he is told specifically to do so. In an application question the student must show that he can use an idea when he is not told to do so but when the problem demands it. In other words, application calls for the transfer of training to new situations. He must select and use the appropriate facts, generalizations, values, and skills to solve the new problem.

Identifying Characteristics:

1. These questions deal with useable knowledge, and emphasis is on the use of information or skill.
2. Questions deal with the whole of ideas and skills rather than solely with the parts.
3. Application questions include a minimum of directions or instructions, because the questions are based on previous learning, and the student is expected to know what to do. The student must himself select what information is appropriate for use.

Types of Application Questions:

1. Subject centered
2. Application of skills

Examples; 1) Background: The students have learned subtraction. In science the students were studying the hatching of eggs.
Question: We put the eggs in the incubator on March 4. The first check hatched on March 25. How many days did it take the first egg to hatch?

2) Background: A class has studied the main regions of the United States. This included consideration of climate, topography, crops, population, vegetation, manufacturing, and agriculture. At the end of the year the teacher displays a half dozen big landscape pictures.
Question: Study each picture carefully and then name a state in which you think the picture might have been taken. Give as many reasons as you can why you think your location might be in the state you name.

Action Verbs for Application Level:

translate	interpret	apply
employ	use	demonstrate
dramatize	practice	illustrate
operate	schedule	shop
sketch		

B. ANALYSIS

Definition: An analysis question requires a student to solve a problem in the light of conscious knowledge of the parts and forms of thinking. The student needs to identify the part and the relationships among the parts of a communication to realize that rules of reasoning apply to the relationships identified, and to consciously determine whether the relationships among the parts satisfy the appropriate rules of reasoning.

Identifying Characteristics:

1. Student needs prior knowledge or rules of reasoning.
2. The appropriate rules of reasoning should not be specified nor implied in the question.
3. It deals with both form and content.
4. Process begins with breaking a communication into constituent parts, explicit or implicit (premises, assumptions, conclusions, etc.).
5. Process includes conscious selection and application of the appropriate rules of reasoning (induction, deduction, logical fallacies, semantics, etc.) to solve a problem.

Examples: (For all of these examples, the background is the study of logic, semantics, the scientific method, or controlled experimentation, or aspects of it, required to properly analyze conclusion.)

1) What, if anything, is wrong with these statements?
Bill: I'd never vote for Democrats. They got us into way under Wilson, Roosevelt, and Truman.
John: Yes, but what about the Republicans? There was a depression under Hoover, and a recession under Eisenhower.

2) Is this a convincing argument? Support your answer.
"Every time Congressmen raise their own salaries, taxes go up. We should demand lower salaries for those people."

Action Verbs for Analysis Level:

distinguish	analyze	differentiate	appraise
calculate	experiment	test	compare
contrast	criticize	diagram	inspect
debate	inventory	question	relate
solve	examine		

E. SYNTHESIS

Definition: A synthesis question requires the student to combine parts of his past experience to create an original product (an unique communication, a plan, or abstract relationship.) Great freedom is given students in deciding what is to be created and how it is to be created. A synthesis question never has one correct response. There are always many good answers which students may work out.

Identifying Characteristics:

1. Emphasis on creation of an original product.
2. Involves divergent thinking and many possible answers.

Examples: 1) Background: The 4th grade teacher has wanted to offset the loss of imaginative thinking and writing which frequently occurs at this age.
Question: Make up a story about two little bears lost in the woods.

2) Background: A box is to be inserted into the cornerstone of a new school. The students in a class are in charge of filling the box with things that show what it is like to go to school during that time.
Question: What do you think should go into the box?

Action Verbs for Synthesis Level:

compose	plan	propose	design
formulate	arrange	assemble	collect
construct	create	design	set up
organize	manage	prepare	

G. EVALUATION

Definition: An evaluation question asks students to make a value judgment of some product, communication, event, or situation. The student must establish the standards appropriate to judging an ideal or object and determine how closely the ideal or object meets the standards. In the answer, the student gives the judgment and tells the considerations which led him to make the judgment.

Identifying Characteristics:

1. Emphasis on judgment.
2. Student must both set and apply standards.

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Examples; 1) Background: The students are studying about using the library. Question: Suppose a boy took a library book home and left it on the floor of the living room. His little brother found the book and tore out some pages. Do you think either boy should be punished? Tell why.

2) Background: The students have studied the colonial period of United States History.
Question: Did the colonists do right in throwing the tea overboard at the Boston Tea Party? Tell why.

Action Verbs for Evaluation Level:

judge	appraise	evaluate	rate	measure
compare	value	revise	score	select
choose	assess	estimate		

WORKSHEET for TASK V: The learner will write two behavioral objectives (remember: Conditions, Performance, Extent) for each of the six levels of the cognitive domain.

MEMORY: (1) _____

_____

_____

(2) _____

_____

_____

TRANSLATION: (1) _____

_____

_____

(2) _____

_____

_____

APPLICATION: (1) _____

_____

_____

(2) _____

_____

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ANALYSIS: (1)

(2)

SYNTHESIS: (1)

(2)

EVALUATION: (1)

(2)

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TASK VI Writing behavioral objectives for the learner's field of study.

ASSIGNMENT: Choose any concept, topic, theme, or generalization from the discipline you wish to teach. Write objectives for your learners at each level of the cognitive domain. You may use your learning package as a guide.

Check your response with other learners.

Subject matter chosen:

1. Memory objective:

2. Translation objective:

3. Application objective:

* You may use Invention to encompass Levels 4, 5, and 6 of the six-category taxonomy.

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USE THIS FORMAT TO PREPARE A LEARNING TASK FOR A PROPSECTIVE TEACHER OR TEACHER AIDE

NAME _____

LEARNING PACKAGE FORMAT

DATE STARTED _____

DATE TO BE COMPLETED _____

AUDIENCE: This should describe the learners.

CONCEPT: This should be a specific statement of the idea, skill, or attitude to be learned. One sentence is usually sufficient.

PURPOSE: This is a rationale to the student indicating why the above concept should be learned. A brief paragraph is usually sufficient.

ENTRY BEHAVIOR: This should describe needed skills before beginning unit.

LEARNING OBJECTIVE: The learning objectives should be stated in behavioral terms and contain three basic elements:

1. The performance expected of the learner.
2. The conditions under which the performance will take place.
3. The proficiency level expected of the learner.

Objectives should include a range of taxonomy categories: knowledge, comprehension, application, and invention. The number of objectives is determined by the producer. One to five objectives are adequate for a package. Behavioral objectives are concept-oriented and should not include material from the learning activities.

LEARNING ACTIVITIES: This is a listing of the activities a student may engage in to learn the above-stated objective. The activities should be as diversified as possible and provide for a broad range of interest and ability levels.

Areas to consider are:

Print Materials: textbooks, periodicals, pamphlets, experiments, worksheets, exercises, charts, etc.

Non-Print Materials and Equipment: films, filmstrips, records, tape recordings, 8mm single concept loops, video tape recordings, study prints, etc.

Resource People: List people to be used from outside the class.

EVALUATION OF STUDENT LEARNING: The evaluation instrument should measure a student's achievement of the behavioral objectives. The degree to which the student has gained an understanding of the idea, skill, or attitude which was to be learned, determines his advancement.

Two tests should be prepared for each package. The instructor, in his course management, can use the evaluation instrument in several ways. They may be used as a pre-test, self-test, post-test, or as two post-tests.

Adapted from Roger Tunks, Portland Public Schools